

### **REMARKS**

This amendment is in response to the Final Office Action dated February 23, 2010. No claims have been amended, no claims have canceled, and no claims have been added; as such, claims 1-10 are now pending in this application. Claims 1, 5, 7, 8, 9 and 10 are independent claims. Reconsideration and allowance is requested in view of the following remarks.

#### **Allowable Subject Matter**

Applicant appreciates the indication claim 3 would be allowable if rewritten in independent form, including all of the features of the base claim and intervening claims.

However, it is submitted that claims 1-2 and 4-10 are also in condition for allowance.

#### **35 USC 103 Response**

Claims 1-2 and 4-10 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakatani et al (US 2004/0247296, hereinafter referred to as “Nakatani ‘296”) in view of Sugahara et al. (US 2003/0154687, hereinafter referred to as “Sugahara ‘687”). Applicant respectfully traverses this rejection.

Claim 1 recites:

*A video-encoding device for encoding video signals and exerts control over the encoding according to an occupied amount of a virtual buffer, the occupied amount being determined based on the amount of codes generated through the encoding and the amount of codes transferred to an output destination, the video-encoding device comprising:*

*recording-mode determination means for determining whether or not seamless connection between a preceding chapter and the following chapter that are included*

*in the video signals is feasible and setting an initial value of the occupied amount of the virtual buffer based on the determination result;*

*occupied-amount update means for updating the occupied amount of the virtual buffer every time the encoding is performed;*

*optimum-occupied-amount calculation means for calculating a predetermined optimum occupied amount based on the updated occupied amount of the virtual buffer;*

*target-code-amount calculation means for calculating a predetermined target-code amount based on the video signals of the following chapter;*

*target-code-amount adjustment means for adjusting the target code amount so that the sum total of the occupied amount of the virtual buffer and the target code amount does not exceed the optimum occupied amount; and*

*encoding means for performing the encoding based on the adjusted target code amount.*

Nakatani '296 fails to disclose teach or suggest these claimed features.

Nakatani '296 relates to an optical disc recording apparatus and an optical disc recording method that each record video objects (compressed audio and video data) so that the seamless reproduction of the video objects is possible even if a pause operation was designated by a user during recording.

In contrast, Applicant's claimed invention achieves seamless connection between video streams that are separately encoded while considering the occupied amount of a preceding chapter of a VBV buffer while transmitting the data of a following chapter to the VBV buffer.

The Non-Final Office Action of August 18, 2009 admits Nakatani '296 fails to disclose or suggest an "*occupied-amount update means for updating the occupied amount of the virtual buffer every time the encoding is performed, optimum-occupied-amount calculation means for calculating a predetermined optimum occupied amount based on the updated occupied amount of the virtual buffer, target-code-amount calculation means for calculating a predetermined target-code amount based on the video signals of the following chapter; target-code-amount adjustment means for adjusting the target code amount so that the sum total of the occupied amount of the virtual buffer and the target code amount does not exceed the optimum occupied amount.*"

However, the Office Action alleges these features can be found in Sugahara '687. This is wholly inaccurate.

Sugahara '687 provides a data coding method and an apparatus which enables the depiction of navigation data for depicting a reproduction control message for reproducing the video object unit and a search message for making a search, before the encoding is started, with a storage memory having a minimum required capacity. Sugahara '687 is also said to enable real-time encoding and depiction of navigation data while maintaining the picture quality to be at an optimum level. In addition, it is possible to determine the target amount of codes for each picture type that corresponds to the encoding rate. Therefore, by making the thus-determined values ones at which the quality of the signals becomes statistically the most excellent, it becomes possible to perform encoding while maintaining the quality of the signal to be at an optimum level.

Though Sugahara '687 discloses a VBV buffer transition observing unit that monitors the amount of occupation of the VBV buffer according to the generated amount of code supplied from the buffer memory, there is no mention of an optimum-occupied-amount calculation means for calculating a predetermined optimum occupied amount based on the updated occupied amount of the virtual buffer.

Likewise, though Sugahara '687 discloses a need for controlling the amount of code so there is no overflow or underflow of the encoding process, there is no mention of a target-code-amount adjustment means for adjusting the target code amount so that the sum total of the occupied amount of the virtual buffer and the target code amount does not exceed the optimum occupied amount.

Furthermore, Sugahara '687 does not mention an *“occupied-amount update means for updating the occupied amount of the virtual buffer every time the encoding is performed; encoding means for performing the encoding based on the adjusted target code amount.”*

The Final Office Action of February 23, 2010 alleges that setting the VBV value of 80% of the maximum value is considered as the optimum occupied amount calculating means. Notwithstanding the fact that 80% is fixed arbitrary number which can not be considered the optimum occupied amount since the optimum occupied amount is calculated by the predetermined optimum occupied amount based on the updated occupied amount of the virtual buffer and therefore not fixed. There is no indication that “80% of maximum value” is ever mentioned in Sugahara '687. Paragraphs [0019], [0021], [0173], and [0178-0180] do not mention “80% of maximum value” or an optimum-occupied-amount calculation means for calculating a predetermined optimum occupied amount based on the updated occupied amount of the virtual buffer.

Furthermore, the Final Office Action of February 23, 2010 indicates that VBV is generally known to maintain and update a buffer fullness in order to stimulate the entering of coded data to and from the physical buffer of the video encoder, as evidenced by 7,349,474. While this may be true, which is not admitted, the Examiner relies upon a reference that is not part of any § 103(a) rejection nor has the Examiner taken Official Notice. Moreover, there is *no identification* as to where Sugahara '687 makes any mention of an "*occupied-amount update means for updating the occupied amount of the virtual buffer every time the encoding is performed; encoding means for performing the encoding based on the adjusted target code amount,*" as claimed by the Applicant.

Indeed, the Examiner has rejected claims 1-2 and 4-10 under 35 U.S.C. § 103(a) as being unpatentable over Nakatani '296 in view of Sugahara '687. If the Examiner wishes to use 7,349,474, the Applicant respectfully requests that this reference be included a § 103(a) rejection as part of a new Non-Final Office Action.

Since even a combination of the relied upon references would still fail to yield the claimed invention, Applicant submits that a prima facie case of obviousness for claim 1 has not been presented. Applicant also notes that the offered combination appears to be a failed attempt to reconstruct the claimed invention in hindsight, as there is no basis to combine the optical disk recording apparatus of Nakatani '296 with the data coding method of Sugahara '687.

For the reasons stated above, claims 5, 9, and 10 also are distinct from the Nakatani '296 in view of Sugahara '687 (although claims 1, 5, 9, and 10 should be interpreted solely based upon the limitations set forth therein). Furthermore, at least for the reason disclosed above, claims 2, 4 and 6 overcome the combination of Nakatani '296 in view of Sugahara '687 because they depend on independent claims 1 or 5 and thus incorporate the distinct features therein, as well as their separately recited patentably distinct features.

Accordingly, Applicant respectfully requests that the rejection of 1-2 and 4-10 under 35 U.S.C. § 103(a) as being unpatentable over Nakatani '296 in view of Sugahara '687 be withdrawn.

## **Conclusion**

In view of the above amendment and remarks, applicant believes the pending application is in condition for allowance.

This response is believed to be a complete response to the Office Action. However, Applicant reserves the right to set forth further arguments supporting the patentability of their claims, including the separate patentability of the dependent claims not explicitly addressed herein, in future papers. Further, for any instances in which the Examiner took Official Notice in the Office Action, Applicant expressly does not acquiesce to the taking of Official Notice, and respectfully request that the Examiner provide an affidavit to support the Official Notice taken in the next Office Action, as required by 37 CFR 1.104(d)(2) and MPEP § 2144.03.

#### **Extensions of time**

Please treat any concurrent or future reply, requiring a petition for an extension of time under 37 C.F.R. §1.136, as incorporating a petition for extension of time for the appropriate length of time.

The Commissioner is hereby authorized to charge all required fees, fees under 37 C.F.R. §1.17, or all required extension of time fees.

#### **Fees-general authorization**

The Commissioner is hereby authorized to charge any deficiency in fees filed, asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm).

Application No. 10/538,086  
Amendment dated May 20, 2010  
After Final Office Action of February 23, 2010

Docket No.: SON-3122

If any fee is required or any overpayment made, the Commissioner is hereby authorized to charge the fee or credit the overpayment to Deposit Account # 18-0013.

Dated: May 20, 2010

Respectfully submitted,

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